Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin
2006-2007 Season

SURVEILLANCE WEEK 14 (April 1-7) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from April 1 - 7, 2007, (Week 14). The analysis for this issue occurred on Thursday April 12, 2007, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during Week 14, 2007 was lower compared to the previous week. Twelve sporadically occurring cases of influenza A were reported through iPHIS from health units, while no new institutional influenza outbreaks were reported. Toronto, Central East, Central West, Eastern, and South West regions reported 'localized' influenza activity levels. North West and North East were the only regions to report 'sporadic' influenza activity.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza@moh.gov.on.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@moh.gov.on.ca, 416-327-7301).

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 14, 2007).

Confirmed Influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	1	1	0	4	4	2	12
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	1	1	0	4	4	2	12
Institutional influenza outbreaks‡	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date† during Week 14, 2007.

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	0	0	0
	North Bay Parry Sound District	1	0	1
	Porcupine	0	0	0
	Sudbury & District	0	0	0
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**1**	**0**	**1**
Eastern	City of Ottawa	0	0	0
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	1	0	1
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**1**	**0**	**1**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	0	0	0
	Peel Region	0	0	0
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	0	0	0
	York Region	0	0	0
	TOTAL CENTRAL EAST	**0**	**0**	**0**
Toronto	Toronto	4	0	4
	TOTAL TORONTO	**4**	**0**	**4**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	0	0	0
	Lambton County	0	0	0
	Middlesex-London	4	0	4
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**4**	**0**	**4**
Central West	Brant County	0	0	0
	City Of Hamilton	1	0	1
	Haldimand-Norfolk	0	0	0
	Halton Region	0	0	0
	Niagara Region	1	0	1
	Waterloo Region	0	0	0
	Wellington-Dufferin-Guelph	0	0	0
	TOTAL CENTRAL WEST	**2**	**0**	**2**
	TOTAL ONTARIO	**12**	**0**	**12**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – April 7, 2007

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	45	0	45
	Thunder Bay District	14	0	14
	TOTAL NORTH WEST	**59**	**0**	**59**
North East	Algoma	21	0	21
	North Bay Parry Sound District	73	0	73
	Porcupine	47	0	47
	Sudbury & District	34	1	35
	Timiskaming	9	0	9
	TOTAL NORTH EAST	**184**	**1**	**185**
Eastern	City Of Ottawa	149	2	151
	Eastern Ontario	19	2	21
	Hastings & Prince Edward Counties	28	0	28
	Kingston, Frontenac, Lennox & Addington	98	1	99
	Leeds, Grenville And Lanark District	26	0	26
	Renfrew County And District	9	0	9
	TOTAL EASTERN	**329**	**5**	**334**
Central East	Durham Region	65	0	65
	Haliburton, Kawartha, Pine Ridge	134	1	135
	Peel Region	179	2	181
	Peterborough County-City	97	0	97
	Simcoe Muskoka District	112	0	112
	York Region	99	2	101
	TOTAL CENTRAL EAST	**686**	**5**	**691**
Toronto	Toronto	501	3	504
	TOTAL TORONTO	**501**	**3**	**504**
South West	Chatham-Kent	10	0	10
	Elgin-St. Thomas	8	0	8
	Grey Bruce	44	1	45
	Huron County	31	0	31
	Lambton County	11	0	11
	Middlesex-London	48	0	48
	Oxford County	18	0	18
	Perth District	40	0	40
	Windsor-Essex County	28	1	29
	TOTAL SOUTHWEST	**238**	**2**	**240**
Central West	Brant County	20	0	20
	City Of Hamilton	251	2	253
	Haldimand-Norfolk	21	0	21
	Halton Region	106	1	107
	Niagara Region	80	0	80
	Waterloo Region	119	0	119
	Wellington-Dufferin-Guelph	85	0	85
	TOTAL CENTRAL WEST	**682**	**3**	**685**
	TOTAL ONTARIO	**2,679**	**19**	**2,698**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During Week 14, 2643 isolates were received by the Public Health Agency of Canada, with a total of 186 testing positive for influenza A and 99 for influenza B. The majority of influenza A isolates (64) were from Quebec (34.4%), while 56 (30.1%) were from Ontario, and 18 (9.7%) from Alberta. Ninety-one influenza B isolates were from Quebec (91.9%), while 3 (3.0%) were from Alberta and 2 (2.0%) were from Ontario.*

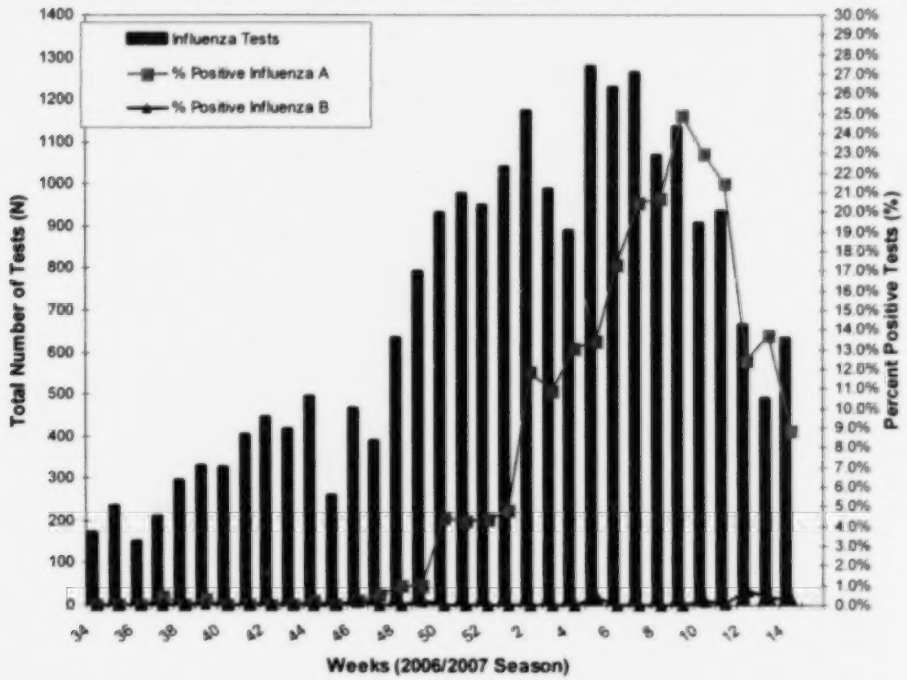
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 790 influenza viruses for the 2006-2007 influenza season: 229 (29%) A/New Caledonia/20/1999(H1N1)-like, 510 (65%) A/Wisconsin/67/05(H3N2)-like, 10 (1%) B/Malaysia/2506/2004-like, and 41 (5%) B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 78% of the A(H1N1) viruses were from the West while the majority of the A(H3N2) viruses were from Ontario (59%) and British Columbia (24%).**

Antiviral Resistance:
Since the start of the season, the NML has tested 782 influenza A isolates (215 H1N1, 567 H3N2) for amantadine resistance. One (0.5% or 1/215) of the H1N1 isolates tested were resistant to amantadine (the resistant isolate originated from Ontario). Of the H3N2 isolates tested, 30.5% (190/567) were resistant. Of the 796 isolates (746 influenza A, 50 influenza B) tested for oseltamivir resistance, none were found to be resistant.**

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada for Week 14, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for week 13, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week*.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 14 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	0	0.0
No organism identified	3	100.0
TOTAL	***3***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	158	26.3
Influenza B	1	0.2
Influenza A and B	1	0.2
Parainfluenza (All types)	25	4.2
RSV	80	13.3
Other organisms	29	4.8
No organism identified	306	51.0
TOTAL	***600***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	416	69.3
Hospitals	37	6.2
Retirement Homes	57	9.5
Other	2	0.3
Unknown	88	14.7
TOTAL	***600***	***100***

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. April 1-7, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – April 7, 2007

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	7058	69.3
Patients	705	6.9
Staff	2390	23.5
Total Cases	**10153**	**100**
Deaths		**% (of cases per role)**
Residents	165	2.3
Patients	14	2.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	266	3.8
Patients	15	2.1
Staff	11	0.5
Hospitalizations		**% (of cases per role)**
Residents	311	4.4
Staff	1	0.0
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	1793	71.4
Patients	163	6.5
Staff	555	22.1
Total Cases	**2511**	**100**
Deaths		**% (of cases per role)**
Residents	55	3.1
Patients	4	2.5
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	102	5.7
Patients	10	6.1
Staff	5	0.9
Hospitalizations		**% (of cases per role)**
Residents	116	6.5
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – April 7, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – April 7, 2007 by causative organism

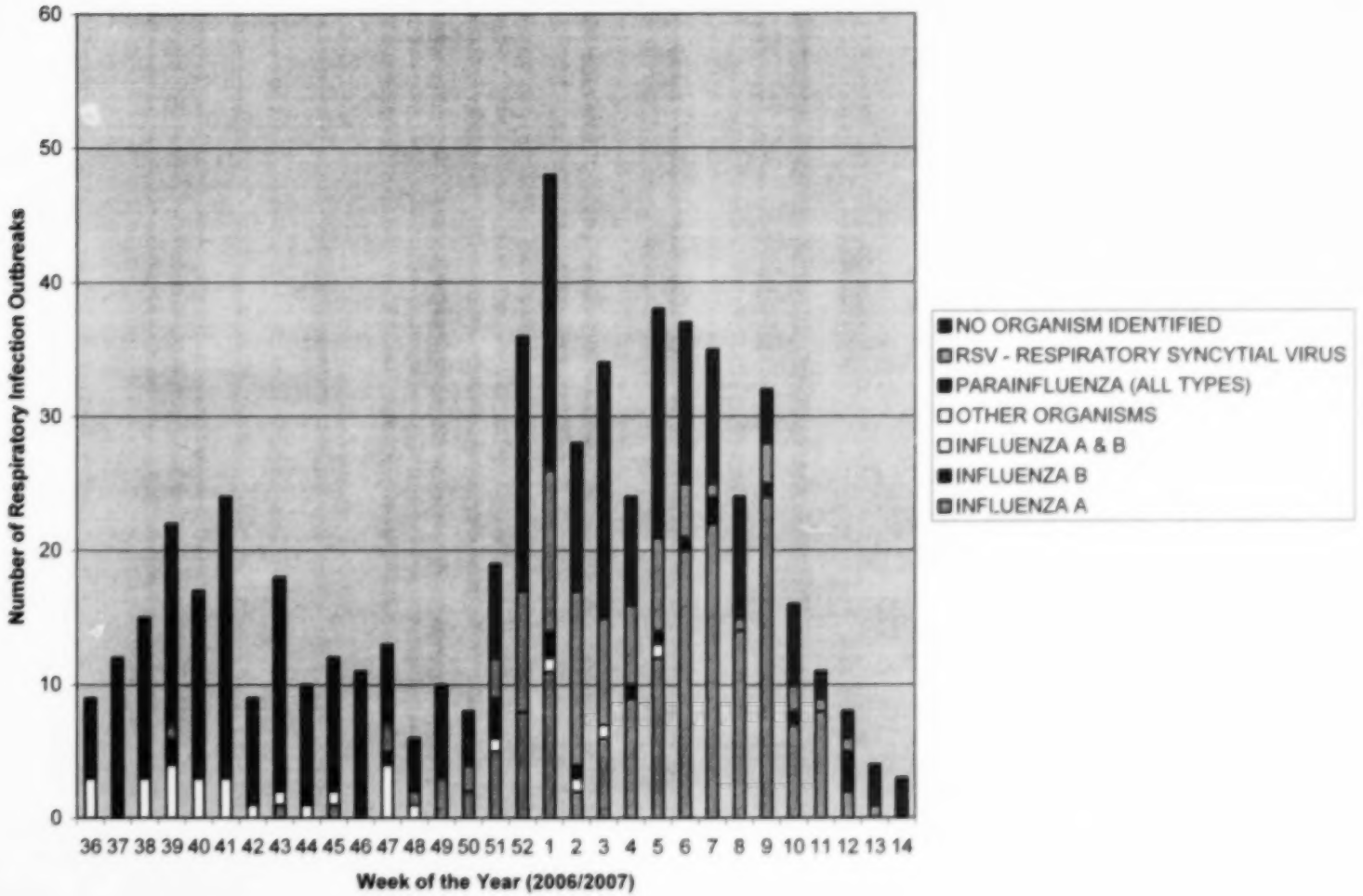
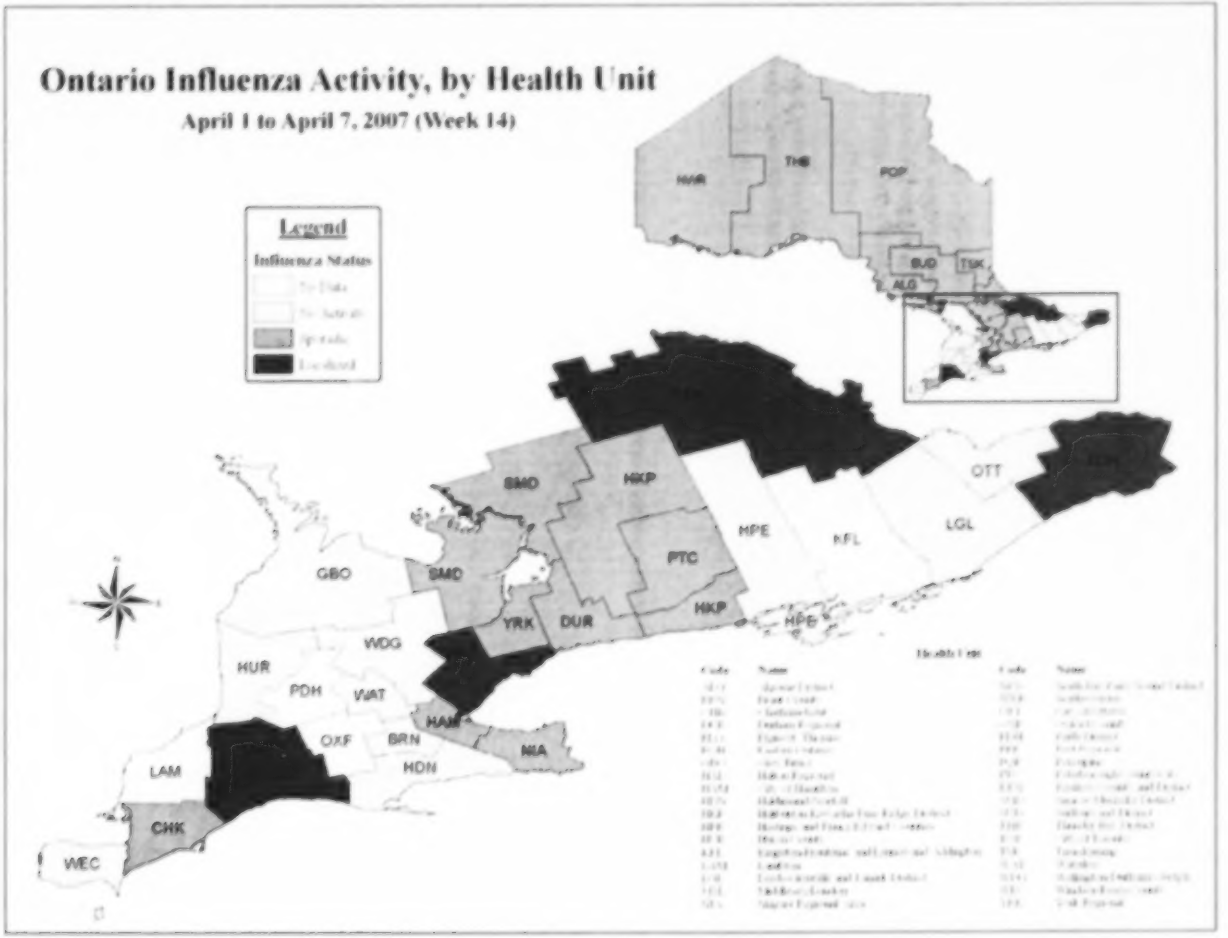

Number of Respiratory Infection Outbreaks
0
10
20
30
40
50
60
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Week of the Year (2006/2007)
NO ORGANISM IDENTIFIED
RSV - RESPIRATORY SYNCYTIAL VIRUS
PARAINFLUENZA (ALL TYPES)
OTHER ORGANISMS
INFLUENZA A & B
INFLUENZA B
INFLUENZA A

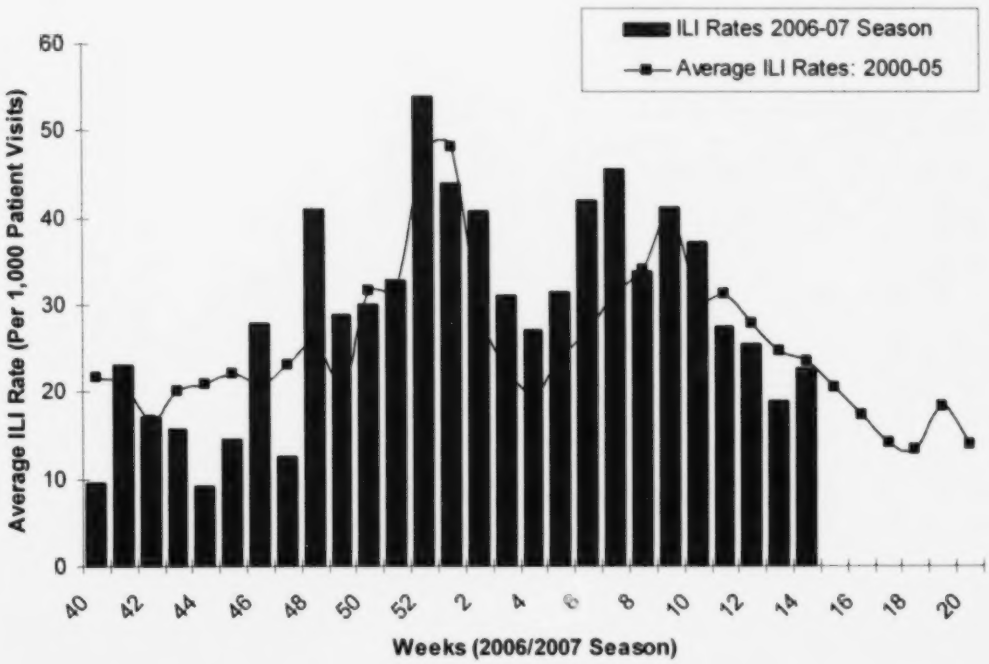
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 14



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



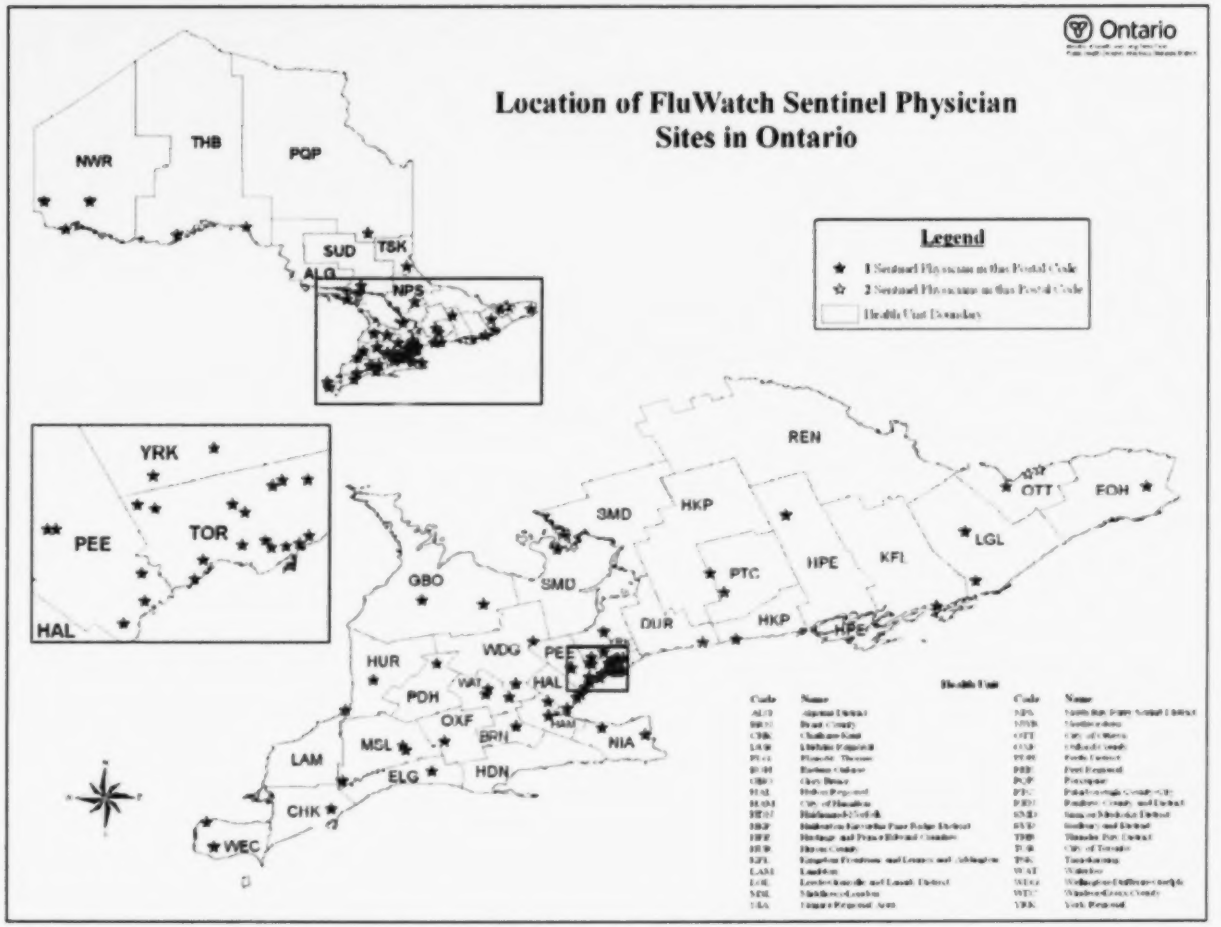
Source: Public Health Agency of Canada
* Sentinel physician information is reported to Public Health Agency of Canada.
†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 14.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	1	0	0	0	0
K1L8H2	0	0	0	0	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
K7H2W6	0	0	0	0	0
K7L1E9	0	0	0	0	0
K0L1C0	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0M1A0	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	0	0	0
M4E1V8	0	0	1	0	0
M2N6H7	0	0	0	0	0
M3H1T1	0	0	0	0	0
M9W4L6	1	0	0	0	0
M8V2Z5	0	0	0	0	0
L5J2W4	0	0	0	0	0
L4Y2N8	0	0	0	1	0
L9W1G2	0	0	0	0	0
L6L1X8	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	1	0	0	0
L0R1H0	0	0	1	0	0
L2E1Y3	0	0	0	0	0
L0R1B0	2	1	2	2	0
N3R7K8	0	0	0	0	0
N3C2E2	0	0	0	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	0	0	0
N5C1G5	0	0	0	0	0
N0P2C0	0	0	0	0	0
N8X2G3	3	0	6	2	0
N0M1T0	0	0	0	0	0
N0L1Z0	0	0	2	0	0
N6A5R9	0	0	1	0	0
N6C2R5	0	0	0	0	0
N0M1L0	2	1	0	1	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0M2L0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	9	3	13	6	0
ILI Consultation Rate (per 1,000 patient visits)	90.91	22.56	17.50	15.27	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_05/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   www.cdc.gov/flu/

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)**†

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)**†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
15	8-Apr-07	14-Apr-07	17-Apr-07
16	15-Apr-07	21-Apr-07	24-Apr-07
17	22-Apr-07	28-Apr-07	1-May-07
18	29-Apr-07	5-May-07	8-May-07
19	6-May-07	12-May-07	15-May-07
20	13-May-07	19-May-07	22-May-07
21	20-May-07	26-May-07	29-Jun-07
22	27-May-07	2-Jun-07	5-Jun-07
23	3-Jun-07	9-Jun-07	12-Jun-07
24	10-Jun-07	16-Jun-07	19-Jun-07
25	17-Jun-07	23-Jun-07	26-Jun-07
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Sep-07
35	26-Aug-07	1-Sep-07	4-Sep-07